

## REMARKS

Attorney for Applicant has carefully reviewed the outstanding Office Action on the above-identified application. Applicant has amended the application, as set forth herein, and submits that the application, as amended, is in condition for allowance.

Attorney for Applicant would like to thank Examiners Michelle Estrada and George Fourson for the courtesies extended during a telephone interview conducted on December 3, 2003.

Applicant's claimed invention relates to methods for manufacturing thin-film active electronics on separate carrier substrates that can be combined using electrical conductors or light guides, wherein at least one of the carrier substrates is flexible. One or more active electrical circuits or components, such as thin film transistors (TFTs), etc., can be formed on the carrier substrates, and the carrier substrates can be bonded using anisotropic, electrically-conductive adhesives or optical lightguide adhesives. Bonding can be performed by laminating the substrates to each other via the adhesives in a continuous process. If anisotropic conductors are used, electricity is conducted between the substrates in a single direction (*e.g.*, in a direction perpendicular to the substrates).

Applicant submits that its pending claims are patentable over the cited references. Specifically, Applicant submits that Japanese Patent No. JP410335830A to Hiramatsu fails to disclose each element of Applicant's claimed invention, as set forth in amended claims 1, 17, and 22. Moreover, Applicant submits that neither Hiramatsu nor U.S. Patent No. 5,944,537 to Smith,

et al. nor U.S. Patent No. 5,409,798 to Kondo, et al., taken alone or in any combination, teach or suggest each element of Applicant's claimed invention, as claimed in claims 2-9, 11-16, and 18-21.

Applicant respectfully submits that independent claims 1, 17, and 22, as amended herein, are patentable over Hiramatsu. Hiramatsu discloses a multilayered printed wiring board and method of manufacture thereof. Holes are formed by laser light in an insulating substrate, on which a metallic layer is formed. The metallic layer is etched to form a conductor circuit, and one or more projecting conductors are formed thereon to form a single-sided circuit board. The single-sided circuit board and another single-sided circuit board are stacked via an anisotropic conductive film, and then heated and pressed.

Hiramatsu fails to teach or suggest providing a process for manufacturing macroelectronics comprising the steps of **producing thin film active electronics on separate carrier substrates, wherein at least one of the carrier substrates is flexible; and combining said substrates using anisotropic electrical conductors or light guides**, as set forth in amended claim 1. Indeed, Hiramatsu fails entirely to disclose providing flexible substrates, but rather, provides a multi-layered wiring board wherein successive layers are laminated on top of each other. As such, Applicant respectfully submits that amended claim 1 is patentable over Hiramatsu. Claims 2-16, which depend from amended claim 1 and contain all of the limitations thereof, are also patentable over Hiramatsu.

Hiramatsu also fails to teach or suggest providing a process for making electronic circuits comprising the steps of **forming at least two active circuits on separate carrier substrates, wherein at least one of the carrier substrates is flexible, and combining said active circuits by connecting them with a material which conducts in a direction perpendicular to the separate carrier substrates**, as set forth in amended independent claim 17. As discussed earlier, Hiramatsu fails to disclose providing separate carrier substrates wherein one of the substrates is flexible. Rather, Hiramatsu merely discloses providing a multi-layered wiring board. Accordingly, Applicant submits that claim 17 is patentable over Hiramatsu.

Further, Hiramatsu fails to teach or suggest providing a method of manufacturing an electronic circuit comprising the steps of: **forming a first active circuit on a first flexible plane; forming a second active circuit on a second flexible plane; and co-laminating said first and second planes with an anisotropic conductor in between**, as set forth in amended claim 22. Hiramatsu is merely concerned with providing a multi-layer printing wiring board, and is unconcerned with forming active circuits on flexible planes. As such, Applicant submits that amended claim 22 and claims 23-25, which depend from and contain all of the limitations of amended claim 22, are patentable over Hiramatsu.

Applicant respectfully submits that claims 2-9 are patentable over Hiramatsu in view of Kondo, et al. Kondo, et al. discloses a printing plate blank, a process for producing a printing plate from a plate blank, and a printing method and apparatus using a plate. The printing plate blank is formed from a base layer, a photosensitive layer, and a peeling support layer. A printing plate is formed from the printing plate blank by forming a polymerized part in the photosensitive

layer through imagewise exposure and peeling apart the peeling support layer to leave the polymerized part of the photosensitive layer on the base layer.

Neither Kondo, et al. nor Hiramatsu, taken alone or in combination, teach or suggest providing a process for manufacturing macroelectronics comprising the steps of **producing thin film active electronics on separate carrier substrates, wherein at least one of the carrier substrates is flexible; and combining said substrates using anisotropic electrical conductors or light guides**, as set forth in Applicant's amended claim 1, and thus do not render dependent claims 2-9 obvious. Hiramatsu, discussed earlier, is directed to providing a multi-layer printed wire board, and is unconcerned with providing active electronics on separate carrier substrates, wherein at least one of the carrier substrates is flexible.

Kondo, et al. provides a printing plate blank, and fails entirely to teach or suggest providing active electronics on a flexible carrier substrate. While Kondo, et al. does disclose a flexible peeling support layer for leaving portions of a photosensitive layer on a base layer, the device of Kondo, et al. is unconcerned with, and indeed incapable of supporting, active electronics. Rather, Kondo, et al. is directed to an unrelated field of endeavor, namely, providing printing plate blanks. As such, one of ordinary skill in the art would not be motivated to combine Kondo, et al. with Hiramatsu. Further, even if one were to combine Kondo, et al. with Hiramatsu, the resulting combination would fail to result in Applicant's claimed invention. As such, Applicant respectfully submits that claims 2-9, which depend from amended claim 1 and contain all of the limitations thereof, are patentable over Hiramatsu in view of Kondo, et al.

Applicant respectfully submits that claims 11-16 are patentable over Hiramatsu in view of Kondo, et al. and Smith, et al. Smith, et al. provides a photolithographically patterned spring contact for electrically contacting devices. The contact is formed on a substrate and electrically connects pads on two devices. An inherent stress gradient causes a portion of the spring to bend upward and away from a bottom substrate, and the spring is made of an elastic material to compliantly contact a second contact pad.

Neither Kondo, et al. nor Smith, et al., taken alone or in combination with Hiramatsu, teach or suggest providing a process for manufacturing macroelectronics comprising the steps of **producing thin film active electronics on separate carrier substrates, wherein at least one of the carrier substrates is flexible; and combining said substrates using anisotropic electrical conductors or light guides**, as set forth in Applicant's pending claim 1, and thus do not render dependent claims 11-16 obvious. Kondo, et al., discussed earlier, provides a printing plate blank, and fails entirely to teach or suggest providing active electronics on separate, flexible carrier substrates. Likewise, Smith, et al. fails to teach or suggest producing thin film active electronics on separate, flexible carrier substrates, but rather, is concerned with providing a spring contact for providing electrical connections between two substrates. As such, Applicant respectfully submits that claims 11-16, which depend from amended claim 1 and contain all of the limitations thereof, are patentable over Kondo, et al., and Smith, et al., taken alone or in any combination with Hiramatsu.

Finally, Applicant traverses the rejection of claims 18-21, and submits that these claims are patentable over Hiramatsu in view of Kondo, et al. and Smith, et al. None of these

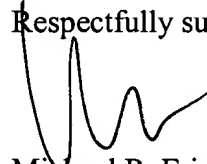
references, taken alone or in any combination, teach or suggest providing a **method of manufacturing an electronic display comprising the steps of depositing a transparent conductor on a transparent substrate; forming a thin film organic light emitting diode circuit on said transparent conductor; forming a thin film transistor circuit; and laminating said circuits to each other**, as set forth in independent claim 18 and claims 18-21 depending therefrom. None of the cited references are concerned with providing a method for forming an electronic display, much less depositing transparent conductors on a transparent substrate to produce such a display. Indeed, each of these references is entirely devoid of any teaching, suggestion, or motivation to provide transparent components. As such, Applicant respectfully submits that claims 18-21, are patentable over Kondo, et al. and Smith, taken alone or in any combination with Hiramatsu.

Applicant has added new claims 26-41 to further define Applicant's invention. Claims 26-41 recite a process for manufacturing macroelectronics comprising the steps of: producing thin film active electronics on separate carrier substrates; positioning the active electronics of the carrier substrates in facing relation with respect to each other; and combining said substrates using anisotropic electrical conductors or light guides. Applicant submits that claims 26-41 are patentable over the references of record, taken alone or in any combination.

All issues raised in the Office Action are believed to be addressed. Claims 1, 17, and 22 were amended, and new claims 26-41 have been added. Claims 1-41 are pending in this application, and are believed to be in condition for allowance. No new matter is believed to have been added. Re-examination is requested and favorable action solicited.

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Respectfully submitted,

  
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